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intake of water by the roots and its transpiration from the leaves have been much investigated, but "the behavior of the wood as the intervening conducting channel has almost entirely been neglected." The method used was to measure the amount of water passing in a given time and at standard pressure through a definite length of twig, the area of the cross-section of the wood being carefully measured. The paper includes two parts, one dealing with evergreens and the other with deciduous plants.

Some of the results are as follows. The specific conductivity of evergreens is relatively low, while that of deciduous plants is relatively high, and with a higher fluctuation. Some of the deciduous trees are more influenced by environmental conditions than are others. Considerable difference, in a lowering of conductivity, was found between the adult wood of the tree and that of "leaders" of young trees, a difference which becomes "exaggerated" in the main shoot of most climbers. The wood of arborescent monocotyledons was found to be defective in water-conductivity. The facts suggest that the lower conductivity of evergreens may be attributed to their narrow and short vessels.—J. M. C.

The Journal of General Physiology.—Many will welcome a new journal of general physiology.[13] Both plant and animal physiology have suffered from being too little related and treated as distinct subjects. Such a publication will aid in bringing them into closer relation. This journal is sure of sufficient financial support and no doubt able editorship. Its aim is stated as follows: "*The Journal of General Physiology* is devoted to the explanation of life phenomena on the basis of the physical and chemical constitution of living matter." The first number contains the following articles: On the dynamics of photosynthesis, W. J. V. OSTERHOUT and A. R. C. HAAS; A method of studying respiration, W. J. V. OSTERHOUT; The antagonism between thyroid and parethyroid glands, E. UHLENHUTH; Difference in the action of radium on green plants in the presence and absence of light, C. PACKARD; Amphoteric colloids, J. LOEB; A theory of the mechanism of disinfection, hemolysis, and similar processes, S. C. BROOKS; The law controlling the quantity of regeneration of the stem of *Bryophyllum calycinum*, J. LOEB; Reversal of reaction by means of strychnine in planarians and starfish, H. R. MOORE; Light and the muscle tonus of insects; the heliotropic mechanism, W. E. GARREY; Lutear cells and hen-feathering, ALICE M. BORING and T. H. MORGAN.—WM. CROCKER.

Embryo sac and fertilization in Oenothera.—ISHIKAWA[14] has investigated the behavior of the gametophytes and the fertilization phenomena in *O. nutans* and *O. pycnocarpa* and their hybrids, both of which species were formerly included in *O. biennis*. Many valuable confirmatory details need not be cited, but the following may be mentioned. The embryo sac is 4-nucleate, lacking antipodals and one of the polar nuclei, and this condition was found not only in *Oenothera*, but also in *Ludwigia*, *Gaura*, *Godetia*, and *Circaea*. The author regards it as a diagnostic character of Onagraceae, and therefore would exclude *Trapa*, with its normal 8-nucleate sac, from the family. This condition in Onagraceae he thinks may have been produced by mutation, but not by adaptation. The pollen tube enters the synergid and the "mixed plasma" flows out and spreads over the egg. The cytoplasm of the pollen grain was found to contain an immense number of minute starch grains, which migrate through the pollen tube, enter the synergid, and finally disappear. The male nucleus is inclosed in a distinct plasma sheath until it reaches the egg. The synergid and the upper two-thirds of the egg have a distinct cellulose membrane, the lower part of the egg acquiring it after fertilization. Self-sterility of some hybrids is said to be due to the feeble growth of the pollen tube.—J. M. C.

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[13] The Journal of General Physiology, editors, JACQUES LOEB and W. J. V. OSTERHOUT. Published bimonthly by the Rockefeller Institute for Medical Research. Vol. I. No. 1. September 1918. Subscription $5.00.

[14] ISHIKAWA, M., Studies on the embryo sac and fertilization in *Oenothera*. Ann. Botany **32**:279–317. *pl. 7. figs. 14.* 1918.

Histology of phloem.—There has been a tendency in recent years to assume that the doctrine of recapitulation is a law as valid and invariable as the laws of physics and chemistry, and to use it as a reliable short cut in the study of the evolution of plants. However, it is to be emphasized that a law is a statement of fact, not a theory or working hypothesis. If the doctrine of recapitulation and similar generalizations are to be accepted as true laws they must be capable of statistical or experimental proof. MACDANIELS[15] points out that, although in a considerable number of woody dicotyls which he studied there is no fundamental difference between the type of sieve tube found in seedlings and first annual rings and that found in the mature condition, the remaining forms possess a presumably less primitive type of structure in the earlier than the later stages of ontogeny. Furthermore, he shows that there is no close parallelism in the specialization of sieve tubes, vessels, and floral structures. It has been a common morphological fallacy to assume that because the evolution of a selected structure progresses apparently in a given direction the sums of all structures (organisms) are moving in a similar direction. MACDANIELS' comprehensive and painstaking piece of work is a valuable contribution to our knowledge of the histology of phloem.—I. W. BAILEY.

Enzyme secretion.—The influence of such inorganic salts as the nitrates, chloride sulphates, and monobasic phosphates of sodium and potassium, and the chlorides and sulphates of calcium and magnesium on the secretion of diastase by *Penicillium camembertii* has been investigated by ROBBINS.[16]

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[15] MACDANIELS, L. H., The histology of the phloem in certain woody angiosperms. Am. Jour. Bot. 5:347–378. 1918.

[16] ROBBINS, W. J., Influence of certain salts and nutrient solutions on the secretion of diastase by *Penicillium camembertii*. Amer. Jour. Bot. 3:234–260. 1916.